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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,359	10/01/2003	Keiji Emoto	03560.003373	5210
5514	7590	12/16/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			MATHEWS, ALAN A	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,359

Applicant(s)

EMOTO, KEIJI

Examiner

Alan A. Mathews

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/19/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. The incorrect document number 2003/035088 to Emoto on Applicant's PTO-1449 has been crossed out. The correct document number 2003/0035088 has been cited on the PTO-892.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1-4, 9, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Bisschops et al. (U. S. Patent Application Publication No. 2002/0180946 A1). Bisschops et al. discloses on page 1, paragraphs # 8 and # 9, and page 3, paragraph # 75, the use of an EUV exposure apparatus. Figure 2 and page 4, paragraph # 85, discloses a vacuum chamber V with a substrate stage (or fine stage) 14 and a substrate W inside. Page 5, paragraph # 92, discloses drivers 16 with linear motors. Paragraph # 92 further discloses " A water-cooled linear motor can easily provide a force of up to 1100N, so that four such motors can provide adequate

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acceleration even when the stage plate and associated parts weight up to 500 kg". This water-cooled linear motor is the cooling means for cooling the electromagnetic motor an amount sufficient t to prevent overheat damage of the motor resulting from heat generated by the motor. Element MT in figure 1 is the original plate stage. With respect to claim 2, the water would be the coolant. With respect to claim 4, the original plate stage MT is out of contact with a heat generating portion of the motor shown in figure 2.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 –10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (U. S. Patent Application Publication No. 2002/0075467 A1) in view of Bisschops et al. U. S. Patent Application Publication No. 2002/0180946 A1). Tanaka et al. discloses on page 14, paragraph # 184, an EUV exposure apparatus. Figure 1 discloses an original plate stage RST and a substrate Stage WST. Figure 2 discloses an electromagnetic motors YM and XMA and XMB for driving the substrate stage WST (see page 5, paragraph # 65). Page 6, paragraph # 82, page 7, paragraph # 95, and page 9, paragraph # 124 disclose supplying refrigerant for cooling the

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armature coils, which would be a cooling means for cooling the electromagnetic motor an amount sufficient to prevent overheat damage of the electromagnetic motor resulting from heat generated by the motor. Page 15, paragraph # 186, discloses having an optical path through which a beam passes placed in a vacuum. With respect to claims 4 and 5, Tanaka et al. discloses in paragraph # 66 supporting in a non-contact manner. In addition paragraph # 131 discloses that Y-axis stationary member 22 is restrained in a non-contact manner. With respect to claims 7 and 8, page 4, paragraph # 57 discloses a fine alignment for detecting the position of a predetermined number of fine alignment marks. In addition, with respect to claims 7 and 8, paragraphs # 126 and # 133 disclose reticle alignment and base line measurement. Tanaka et al. does not disclose placing a substrate in a vacuum. Bisschops et al. discloses in figure 2 placing the substrate stage in a vacuum chamber V. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to place the substrate chamber in Tanaka et al. in a vacuum chamber V for the purpose of better control of impurities and thus producing a better final product.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents on Applicant's PTO 1449 are cited for the same reasons Applicant cited them in his INFORMATION DISCLOSURE STATEMENT. The patent to Kamata et al. (U. S. Patent No. 6,084,319) discloses a linear motor including a coil and a jacket which allows a cooling medium to be supplied. Figure 22 discloses the use of the temperature controlled linear

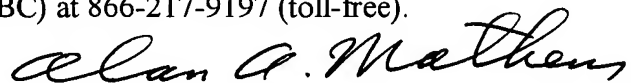
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motors in an exposure apparatus. The patent to Emoto (U. S. Patent Application Publication No. 2003/0035088 A1) is cited to show the correct Publication Number in place of the 2003/035088 A1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (571) 272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alan A. Mathews
Primary Examiner
Art Unit 2851

AM